



Syllabus

To-Do Date: Sep 1 at 11:59pm

 <p>POINT¹⁹LOMA NAZARENE UNIVERSITY</p>	<p>Mathematical, Information and Computer Sciences</p> <p>CSC 2054 Data Structures and Algorithms / CSC 2052 Data Structures in C++</p> <p>4 / 2 unit class</p>
<p>Fall 2020</p>	

<p>Instructor: Dr. Benjamin Mood</p>
<p>Phone: 619.849.2269</p>
<p>Email: bmood@pointloma.edu</p>
<p>Office hours via Discord and Zoom:</p> <p>M: 8:30 - 9:30, 1:30 - 2:30 T: 1:45 - 3:00 W: 8:30 - 9:30 R: 9:30 - 10:30, 3:00 - 4:15 F: 7:30 - 9:30, 12:15 - 1:45</p>

PLNU Mission

To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Department Mission

The Mathematical, Information, and Computer Sciences department at Point Loma Nazarene University is committed to maintaining a curriculum that provides its students with the tools to be productive, the passion to

continue learning, and Christian perspectives to provide a basis for making sound value judgments.

COURSE DESCRIPTION

CSC2054

Standard data structures, including queues, stacks, trees, and graphs, as objects are defined and illustrated with associated dynamic storage management mechanisms. Introduces formal techniques to support the design and analysis of algorithms, focusing on both the underlying mathematical theory and practical considerations of efficiency. Topics include measuring the complexity of recursive and iterative algorithms, algorithmic strategies, the concept of intractability and the theory of NP. Emphasis is placed on non-numerical algorithms such as sorting, searching, graph and network algorithms both sequential and parallel. Concepts are reinforced through weekly programming assignments. Lecture three hours and laboratory two hours each week.

CSC2052

Students transition to the C++ language and are introduced to additional data structures, including queues, stacks, trees, and graphs considering their implementation with both arrays and linked lists. Concepts are reinforced through weekly programming assignments. Lecture three hours and laboratory two hours each week (this is a quad class). Annually. CSC2052 is the first quad of CSC2054.

COURSE LEARNING OUTCOMES

CSC2052

Students will be able to write correct and robust software.

Students will analyze the interaction between hardware and software.

Students will be able to apply their technical knowledge to solve problems.

Students will be able to speak about their work with precision, clarity and organization.

Students will be able to write about their work with precision, clarity and organization.

Students will collaborate effectively in teams.

Students will be able to gather relevant information, examine information and form a conclusion based on that information.

Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.

CSC2054

Students will be able to write correct and robust software.

Students will use the theory of algorithms and computation to solve problems.

Students will analyze the interaction between hardware and software.

Students will be able to apply their technical knowledge to solve problems.

Students will be able to speak about their work with precision, clarity and organization.

Students will be able to write about their work with precision, clarity and organization.

Students will collaborate effectively in teams.

Students will be able to gather relevant information, examine information and form a conclusion based on that information.

Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

CSC2052/2054: *C++ for Java Programmers* by Mark Allen Weiss

CSC2054: *Data Structures and Algorithm Analysis in C++* by Mark Allen Weiss

COURSE CREDIT HOUR INFORMATION

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 4 unit class delivered over fifteen weeks. Specific details about how the class meets the credit hour requirement can be provided upon request. (Based on 37.5 hours of student engagement per credit hour.)

Distribution of Student Learning Hours

Category	Time Expectation in Hours
Class meetings + exams	16.25
Labs (including lab meetings & lab exam & uno project)	110
Reading and quizzes	30
Total Hours	156.25

ASSESSMENT AND GRADING

Graded Components

- **Labs:** Labs are used to give students a way to practice the concepts studied in lecture. A completed lab includes answers to the theoretical questions (in a .txt file) AND all code and necessary data files turned in online on canvas. It should be well commented with meaningful variable and function names. Code missing comments or with poor names will not be given full credit. Labs must be signed off or 5% will be deducted.

- **Uno AI:** CSC2054 students will be creating an AI for Uno as an end of the semester project. A late Uno project will be penalized.
- **Attendance and Participation:** Points are awarded for being present and selected participation activities.
- **Reading Quizzes:** There are collaborative reading quizzes on the text covered a particular week. The quizzes are due after the lecture to ensure students have an opportunity to ask questions. Students may talk through questions with others who are currently working on the quiz, but not give answers to those who are not actively working on the quizzes with them.
- **Examinations and the Final Examination.** Examinations and the Final Examination will include problems and questions over material assigned in the text, readings and handouts, as well as material presented in class. No examination shall be missed without prior consent or a well-documented emergency beyond your control. A score of zero will be assigned for an examination that is missed without prior consent or a well-documented emergency beyond your control.
- **Late work will not be accepted** without prior consent or a well-documented emergency. Up to a maximum of one homework assignment will be accepted up to 3 days late provided that consent is received from the professor before it is due. Homework assignments that are submitted late without prior consent will be recorded with a score of zero. If more than half of the homework assignments are submitted on time, then the lowest homework score will be dropped from the calculations of the homework grade.
- The examination schedule is included in the daily schedule. This instructor does not intend to accept excuses such as poor communication with parents, benefactors, surf team sponsors and/or travel agents.

Grading Distribution (CSC2052 is scaled without the Final & Uno)	Percent
Labs	30
Attendance & Participation	5
Reading Quizzes	5
Programming Exam	15
Midterm/CSC2052 final	15
Final	20
Uno AIs	10
Total	100

Grading Scale

A student must pass at least one exam in order to pass the class. That is, a score of 60% must be achieved on one of the examinations, or else the final grade will be an F regardless of all other point totals.

Approximate minimal percentages required to obtain a given grade are:

Standard Grade Scale Based on Percentages					
	A	B	C	D	F
+		87.5- 90	77.5-80	67.5-70	
	92.5 -100	82.5-87.5	72.5-77.5	62.5 -67.5	0-60
-	90-92.5	80-82.5	70-72.5	60-62.5	

STATE AUTHORIZATION

Rule suspended during the COVID-19 pandemic. State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization \(https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures\)](https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures) to view which states allow online (distance education) outside of California.

INCOMPLETES AND LATE ASSIGNMENTS

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances.

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies \(http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278\)](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278) for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center. (DRC@pointloma.edu or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 (a) prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

PLNU ATTENDANCE AND PARTICIPATION POLICY

Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. See [Academic Policies](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278) (<http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278>) for further information about class attendance.

SPIRITUAL CARE

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith. If students have questions, a desire to meet with the chaplain or have prayer requests you can contact the [Office of Spiritual Development](https://www.pointloma.edu/offices/spiritual-development) (<https://www.pointloma.edu/offices/spiritual-development>)

Monday		Wednesday		Friday
17-Aug	18-Aug	19-Aug	20-Aug	21-Aug
Intro		Chapter 1	Lab 1	
24-Aug	25-Aug	26-Aug	27-Aug	28-Aug

Chapter 2		Quiz chapter 1 due Quiz chapter 2 due	Lab 1 due Lab 2	
31-Aug	1-Sep	2-Sep	3-Sep	4-Sep
Chapter 3		Quiz chapter 3 due	Lab 2 due Lab 3	
7-Sep	8-Sep	9-Sep	10-Sep	11-Sep
Chapter 4		Quiz chapter 4 due	Lab 3 due Lab 4	
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep
Chapter 5		Quiz chapter 5 due	Lab 4 due Lab 5	
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep
Chapter 6		Quiz chapter 6 due	Lab 5 due Lab 6	
28-Sep	29-Sep	30-Sep	1-Oct	2-Oct
Written Exam			Programming Exam Lab 6 due	
5-Oct	6-Oct	7-Oct	8-Oct	9-Oct
parts of Chapter 9/10		Quiz chapter 9/10 due	Lab 7	
12-Oct	13-Oct	14-Oct	15-Oct	16-Oct
Chapter 2 (book II)		Quiz chapter 2 due	Lab 7 due Lab 8	
19-Oct	20-Oct	21-Oct	22-Oct	23-Oct
Chapter 4		Quiz chapter 4 due	Lab 8 due Lab 9	

26-Oct	27-Oct	28-Oct	29-Oct	30-Oct
Chapter 5		Quiz chapter 5 due	Lab 9 due Lab 10	
2-Nov	3-Nov	4-Nov	5-Nov	6-Nov
Chapter 8		Quiz chapter 8 due	Lab 10 due Lab 11	
9-Nov	10-Nov	11-Nov	12-Nov	13-Nov
Chapter 9		Quiz for chapter 9 due	Lab 11 due Uno Project	
16-Nov	17-Nov	18-Nov	19-Nov	20-Nov
Chapter 9		Quiz II for chapter 9 due		
23-Nov	24-Nov	25-Nov	26-Nov	27-Nov
	Uno Due	Thanksgiving		Thanksgiving
30-Nov	1-Dec	2-Dec	3-Dec	4-Dec
Final Day.				